

Notice of Allowability

Application No.

10/766,681

Examiner

Carol S. Tsai

Applicant(s)

CHENG ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/27/2004.
2. ☒ The allowed claim(s) is/are 1-44.
3. ☒ The drawings filed on 27 January 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>7/27/2004</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-44 are allowed.
2. The following is an examiner's statement of reasons for allowance:

U.S. Patent No. 5,727,119 to Davidson et al. is the reference closest to the claimed invention. Davidson et al. disclose a method to process an input signal for providing accurate measures of spectral magnitude and phase, said method comprising receiving a plurality of said input signal samples and forming a sequence of signal sample blocks; generating first spectral representations by applying a first single-sideband filter bank to said sequence of signal sample blocks, and generating second spectral representations by applying a second single-sideband filter bank to said sequence of signal sample blocks; deriving measures of magnitude and/or phase of spectral components in said audio information in response to said first and second spectral representations, and processing said first spectral representations to generate an output signal suitable for transmission or storage, wherein said processing is adapted in response to said measures of magnitude and/or phase of spectral components, wherein successive blocks in said sequence of signal sample blocks overlap one another and said first and second single-sideband filter banks are implemented by discrete transforms. However, Davidson et al. does not teach a method of processing information representing a source signal conveying content intended for human perception, the method comprising: receiving first spectral components that were generated by application of an analysis filterbank to the source signal, wherein the first spectral components represent spectral content of the source signal expressed in a first subspace of a

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multidimensional space; deriving one or more first intermediate components from at least some of the first spectral components, wherein at least some of the first intermediate components differ from the first spectral components from which they are derived; forming a combination of the one or more first intermediate components according to at least a portion of one or more impulse responses to obtain one or more second intermediate components; deriving one or more second spectral components from the one or more second intermediate components, wherein the second spectral components represent spectral content of the source signal expressed in a second subspace of the multidimensional space that includes a portion of the multidimensional space not included in the first subspace; obtaining estimated measures of magnitude or phase using the first spectral components and the second spectral components; and applying an adaptive process to the first spectral components to generate processed information, wherein the adaptive process is responsive to the estimated measures of magnitude or phase; and including all of the other limitations in the respective independent claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Johnstone discloses coding of high quality stereophonic audio signals being

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accomplished in a perceptual filterbank coder which exploits the interchannel redundancies and psychoacoustic.

Davis et al. disclose quantization noise suppression for encoder/decoder system.

Ferreira et al. disclose a method and apparatus for performing a Modified Discrete Cosine Transform on an audio signal which utilizes a Discrete Fourier Transform.

Johnstone discloses a method and apparatus for quantizing audio signals which advantageously produces a quantized audio signal which can be encoded within an acceptable range.

Moses et al. disclose a communication system for simultaneously transmitting ancillary codes and audio signals via a conventional audio communications channel using perceptual coding techniques.

Kouri et al. disclose a method for padding, filtering, denoising, image enhancing and increased time-frequency acquisition for digitized data of a data set where unknown data is estimated using real data by adding unknown data points in a manner that the padding routine can estimate the interior data set including known and unknown data to a given accuracy on the known data points.

Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol S. W. Tsai whose telephone number is (571) 272-2224. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S.

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Hoff can be reached on (571) 272-2216. The fax number for TC 2800 is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2800 receptionist whose telephone number is (571) 272-1585 or (571) 272-2800.

In order to reduce pendency and avoid potential delays, Group 2800 is encouraging FAXing of responses to Office actions directly into the Group at (703) 872-9306. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2800 will be promptly forwarded to the examiner.



Carol S. W. Tsai
Primary Examiner
Art Unit 2857

04/18/05